Math 7 Unit 1 worksheet: Distance on a number line

Name _____ Date _____ Period _____

1. Find the distance between the two points with these coordinates. Write each distance as the absolute value of a difference first.

(a) -9 and 4

(b) -15 and -6

(c) 23 and -8

(d) -31 and -47

(e) -6.3 and 12

(f) -0.45 and -7

(g) $-3\frac{2}{5}$ and 1.5

(h) $-\frac{5}{6}$ and $\frac{3}{4}$

2. A rocket launch is timed in seconds from liftoff, so 30 seconds before liftoff is the time -30 s. The main engines start at -5 s, and the first stage drops away at 161 s. How many seconds pass between the two events?

3. In golf, a score is reported against par: 4 strokes under par is written -4. After two rounds, Priya is at -5 and the tournament leader is at -9. How many strokes behind the leader is Priya? Show the subtraction and the absolute value.

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4. Clocks around the world are set by their offset from UTC (world standard time), in hours. The offsets in January are: Honolulu −10, New York −5, Delhi + 5.5, Kathmandu + 5.75, Tokyo + 9. How far apart are the clocks of:

(a) Honolulu and Tokyo, in hours?

(b) New York and Delhi, in hours?

(c) Delhi and Kathmandu, in minutes?

5. Each student made a mistake. Explain it, then find the correct distance.

(a) Leah wrote: the distance between −7 and 5 is $|-7-5| = |-2| = 2$.

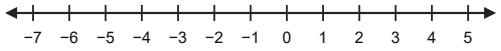
(b) Omar wrote: the distance between 6 and −9 is 6 − 9 = −3 units.

6. Point P is 6 units from −1 and 4 units from 9. Find the coordinate of P, and show that there is only one such point.

7. The number x satisfies $|x-3| = |x+5|$.

(a) Rewrite $|x+5|$ as the absolute value of a difference, and say what each side of the equation measures on a number line.

(b) Use that meaning to find x, and explain why there is only one answer.



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